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AUTHOR	McBain, Susan L.; And Others
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ABSTRACT

Project CLASS (Competency-Based Live-Ability Skills) uses a series of 60 modules to teach life survival skills to adults with low-level reading ability--especially Adult Basic Education/English as a Second Language students. Two versions of the modules have been developed: one for use with teacher-directed instruction and another for independent study. Divided equally between Adult Performance Level (APL) level I (reading level grades 0-4) and level II (reading level grades 5-8), the modules cover basic survival competencies in these APL areas: consumer economics, government and law, health, community resources, occupational knowledge, and interpersonal relationships. (Module content and costs are also discussed.) A full-scale field test conducted at four sites found tremendously significant differences between the 728 treatment and 733 control students in percent of students mastering objectives. (YLB)

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PROJECT CLASS

ELNA M. DIMOCK - DIRECTOR

CLOVIS ADULT SCHOOL

CLOVIS UNIFIED SCHOOL DISTRICT

CLOVIS, CALIFORNIA

A SUBMISSION TO THE

JOINT DISSEMINATION REVIEW PANEL

Susan L. McBain

Jack A. Hamilton

Steven M. Jung

Elna M. Dimock

13 January 1980

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

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PROGRAM AREA: ABE/ESL

ACTIVITY TITLE, LOCATION: Project CLASS (Competency-Based Live-Ability Skills), Clovis, California

DEVELOPED BY: Clovis Adult School - Elna M. Dimock, Director

SOURCE AND LEVEL OF FUNDING:

1976-1977	40,400	
1977-1978	81,215	
1978-1979	109,856	Funded by Adult Education
1979-1980	125,874	Act, Section 309/310

YEARS OF ACTIVITY DEVELOPMENT: 1976-78--development and pilot testing; 1978-79--evaluation for revision; 1979-80--evaluation for impact

BRIEF DESCRIPTION OF ACTIVITY

Project CLASS utilizes a series of 60 modules to teach survival skills to a broad range of adults with low-level reading abilities. Two versions of the 60 modules have been developed: one for use with teacher-directed instruction and a second set for independent study.

Development

Development of Project CLASS materials began in the fall of 1976 with recognition that many Adult Basic Education (ABE)/English as a Second Language (ESL) students needed instruction in basic skills required to survive in American society. At that time, only one ABE program had received Joint Dissemination Review Panel (JDRP) approval as exemplary, even though the Panel had been operating for three years. The single exemplary ABE project, approved in 1975, was the Adult Performance Level (APL) Study of the University of Texas at Austin. During the APL Study, basic survival competencies were identified in five areas: consumer economics, government and law, health, community resources, and occupational knowledge. In addition, assessment items based on these competencies were developed for high school students and the general English-speaking population over 18. These competencies were also used as the basis for the Project CLASS modules.

To determine the adult competencies that would be the foundation for their survival skills modules and module tests, the Project CLASS staff closely examined the assessment items from the JDRP-approved University of Texas APL Study. A list of competency statements was derived from the APL Study assessment items. This list of statements was discussed with students and teachers in the Clovis Adult School, and additions were then made to it. This process resulted in a total of 55 adult competencies judged to be those that adults needed in order to function effectively in everyday life. In the spring of 1977, a survey instrument was developed based on these competencies. Respondents were to rate each of the 55 competency statements according to whether each was: (1) essential, (2) useful, but not essential, and (3) unimportant. Space was provided for other competencies to be written in by respondents.

In the late spring and early summer of 1977, this survey was administered to the approximately 60 members of the Clovis Unified School District Advisory Committee.

These members were a representative cross-section of the Clovis community. The results of this survey were compared with the results of a similar but more exhaustive survey conducted by the Los Angeles Unified School District and reported in 1977. The Los Angeles Survey was administered to a cross-section of that community including school administrators, teachers, students, business people, and other community members. The total N was approximately 650. The comparison showed that the 30 top-ranked competency statements in the Clovis Survey were also the top 30 that emerged from the Los Angeles Survey. The rankings were not in the same order, but the top 30 from each survey contained the same competency statements.

Project CLASS staff proceeded to develop 60 modules and module tests based on the 30 competency statements. Frequently, more than one module was written to cover one competency because it was found that some of the competency statements were too broad to handle effectively in just one module. Development, pilot testing, and preliminary field testing took place during 1977 and 1978.

In the fall of 1978, the Division of Adult Education (in the U.S. Office of Education's Bureau of Occupational and Adult Education) began seeking nominations of exemplary local ABE projects from state directors of adult education. The goal was to promote entry of adult education programs into the National Diffusion Network (NDN) and eventually into wider utilization across the nation. California nominated Project CLASS, one of the most promising of its Section 310 projects, as a pilot to undergo extensive field testing in order to obtain effectiveness data that might meet the requirements of the JDRP. This field test was planned and conducted from March to December 1979, and its results are discussed below.

Goals and Objectives

The goal of Project CLASS is an increase in demonstrated competency in life survival skills among adults with low-level reading abilities.

Each of the project's 60 modules contains one or more specific behavioral objectives to which its content is related. All these objectives cannot be presented here, but a typical objective for the module Counting and Converting Coins and Currency states: "By the end of this module, students will show, orally, in writing, or through demonstration, that they are able to identify and read selected symbols and words which correspond with United States coins and currency and tell their values in other coins." Objectives are identical for both the teacher-instructed and independent study versions of each module.

Activity Description

Project CLASS utilizes a modular approach to provide instruction in survival skills to adult students at low (0-8 grade equivalent) reading levels. Adult students often have difficulty in transferring academic learning in the classroom to use in situations outside school. This project addressed the problem by the development of competency-based modules at varying reading levels to deal with common situations of daily life. By using the modules in classroom situations, students learn survival skills while improving their reading, writing, and math. Students who read at a higher level can study the independent modules at their convenience to meet course requirements or receive elective credit. Each module contains from one to nine objectives, with an average of four objectives per module, that are clearly stated, taught, and tested, showing the participating teachers, students, and others what the student has accomplished.

A total of 60 Project CLASS modules have been developed; these are divided equaliy between APL level I (reading level grades 0-4) and level II (reading level grades 5-8). Each module includes: (1) a teacher's guide containing objectives, concepts, skills, teaching/learning strategies, list of resources, evaluation

report, annotated bibliography, answer keys for handouts and pre/posttest, and specially written teacher's resources; (2) handouts for the students; and (3) a pre/posttest that tests each objective in the module. Each module's activities occupy an average of six hours and can be completed in from one to three class sessions.

Level I modules have identical concepts written at both (0-2) and (3-4) reading levels, which enables students to learn concepts at their own reading levels. Level II modules cover different objectives on APL level II. The modules cover the following topics:

TABLE I

APL I Modules	APL II Modules
Consumer Economics:	**Consumer Economics:**
Counting and Converting Coins and Currency	Weights and Measures
Weights and Measures--Traditional	Using a Catalog--Mail Order
Preparing a Budget	Using the Telephone
Selecting Clothing with Understanding	Sales Tax
Using the Telephone	Housing Needs
Comparative Shopping for Grocery Items	Car Maintenance--Repair Outlet
Selecting a Good Buy	Credit
Sales Tax	Insurance--Auto
Eating Out	Advertising Techniques
Car Maintenance at a Garage	Banking
Car Maintenance at Home	Income Tax Short Form
Government and Law:	**Government and Law:**
Legal Rights When Arrested	Legal Rights and Responsibilities When Driving
The Voting Process	Voting
Obtaining Personal Documents	How the Tax System Works
Health:	Relationships Between Individual Citizen and Government
Community Health Services	Consumer Legal Rights
Your Appointment with the Doctor	**Health:**
Health Needs of Children	Family Planning
Health Concerns of Women	**Community Resources:**
Nutrition	Use of Maps in Travel
Home Safety	Library
Applying First Aid in Emergencies	Travel Information
How to Stay Healthy	The Safe California Driver
Health Concerns of Men	**Occupational Knowledge:**
Community Resources:	Categories of Jobs
Cultural Enrichment	Sources of Job Information--Want Ads
Social Security	Job Application
Traffic Signs	Keeping a Job
Riding the Bus	Labor Unions
Using the Post Office	Test-taking
Occupational Knowledge:	**Interpersonal Relationships:**
How to Find a Job	Problem Solving
The Job Interview	Parenting--Adolescents
Interpersonal Relationships:	Parenting Small Children
(no modules at this level)	

The printing and packaging of the modules are specifically designed for reproduction purposes. The pages are printed on one side only and are unbound. Suggestions for various ways of binding the modules for student use are included. Each user can reproduce varying amounts of each section at different times according to need. Each part of the module (teacher's guide, student handouts, pre/posttest) is color-coded for ease of identification.

Following initial development, each module was pilot tested, revised, field tested on a preliminary basis at 23 California sites with a total of 2,700 students, and revised again. Each module was also evaluated by at least two users via an evaluation form, and module purchasers have also been encouraged to send feedback to the developers. The fall 1979 field test was thus conducted on a carefully developed and refined set of materials.

Costs

Each complete set of modules (60 teacher-instructed, 60 independent study) currently sells for $90, including shipping charges. It is highly recommended that a potential adopting site organize a 2-day teacher inservice program for the purpose of training teachers in the various methodologies for using the modules. Clovis Adult School personnel are available to direct such sessions at a consulting rate of $150/day with reimbursement of travel and per diem costs. For a class of 20 students in the first year, the estimated per-student cost would be $29.70 based on the following expenditures:

2-day inservice program	$300 (plus consultant travel and per diem)
1 set of modules	90
Reproduction of handouts and module tests	204
TOTAL	$594

For each additional class of 20 students, the estimated per-student cost would be $14.70 (the inservice costs would not be repeated). If each additional class shared the purchased materials, the estimated per-student cost would be $10.20 (the only additional cost being reproduction of handouts and tests). For each additional class of 20 students in subsequent years, the estimated per-student cost would be $10.20.

EVIDENCE OF EFFECTIVENESS

Claims of Effectiveness

It is claimed that utilizing the Project CLASS modules significantly increases students' competency levels in life survival skills when compared with students who have not completed the modules.

Research Design

A full-scale field test of the project's 60 modules was conducted in the fall of 1979 at the four sites described in the next section. The numbers and levels of modules tested at each site are shown in Table II.

TABLE II

	APL Level I	APL Level II
Fremont Union High School District Adult School	8	0
Mira Costa Community College	9	9
San Diego Community College	13	20
Clovis Adult School	0	1
	30	30

Context and students served. The modules were field tested in operating ABE/ESL programs at the four sites. These sites are listed below in Table III, together with demographic information for each site.

TABLE III

Site	Demographic Information
Fremont Union High School District Adult School	Suburban area. District Population: 142,550. Average income: $21,500. Major employment: electronics manufacturing, banking. Ethnic composition: 80% White, 6% Hispanic, 2.5% Black, 11.5% Other including Asian. Adult program ethnic composition: 20% White, 27% Hispanic, 43% Asian, 0% Black. (This is an all ESL Adult Program.)
Mira Costa Community College	Rural Area. District population: 125,000. Average income: $9,000. Major employment: military, light industry, agriculture. Ethnic composition: 79% White, 9% Hispanic, 8% Black, 3% Asian, 1% Native American. Adult program ethnic composition: 58% White, 16% Hispanic, 10% Black, 16% Other including Asian.
San Diego Community College	Urban area. District population: 1,767,450. Average income: $10,982. Major employment: military and related industries. Ethnic composition: 48% White, 34% Hispanic, 10% Asian, 5% Other. Adult program ethnic composition: 57% Hispanic, 22% Indochinese, 10% other Asian, 11% Other.
Clovis Adult School	Rural area. District population: 30,150. Average income: $17,000. Major employment: government services, retail trade, agriculture. Ethnic composition: 75% White, 19% Hispanic, 2% Black, 4% other non-White. Adult program ethnic composition: 56% White, 31% Hispanic, 2% Black, 11% other non-White.

Instrumentation. The 60 modules contained a total of 238 objectives, with a range of 1 to 9 objectives per module. The measurement instruments consisted of one test for each module, which was administered as both the pretest and the posttest. Each module instrument measured attainment of all objectives in the module. In almost every case each objective was measured independently; however, in a few cases two or more closely related objectives were measured by the same items. This occurred in six cases: in three cases, two objectives were measured by the same items; in two cases, three objectives; and in one case, four objectives. Therefore the achievement of the 238 objectives was measured by 228 actual comparisons.

In most cases, tests were conducted and answered in writing. But some objectives called for performance of a skill and some acquired oral responses; in these cases the teacher might record the student's response or performance. At

Level I only, teachers were permitted to read the tests or individual items aloud if in their judgment their students would be unable to respond otherwise. Such assistance occurred in both the treatment and control groups.

Scoring of the pre/posttests was done on a mastery or nonmastery basis for each objective. If a test contained several items, the following decision rules shown in Table IV were used to determine the mastery level:

TABLE IV

Number of Items Per Objective	Items Correct to Achieve Mastery
1	1
2	1
3	2
4	3
5	4
6	4
7	5
8	6

Validity of instruments. The field test instruments were developed locally; they were revised over the three-year development period on the basis of pilot test and preliminary field test results. The tests have high face validity in that they are directly related to the modules' behavioral objectives, calling for demonstration of the major competencies upon which the modules are based.

Reliability of instruments. Test-retest reliability estimates were obtained by sampling the module test results for 10 control groups at two of the four sites: Fremont and Mira Costa. A two-three week interval elapsed between the pretest and posttest for these groups. An average correlation coefficient of .77 was computed on the raw scores obtained from the two administrations of the tests in these groups.

Credibility of evidence. At each site a local field test coordinator was selected to act as liaison between teachers and the Project CLASS staff. Each coordinator recruited interested teachers from the adult program to field test modules. At each site, a workshop led by the director of Project CLASS was held for all volunteering teachers. At this workshop, some of the volunteers were asked and consented to serve as controls for purposes of the field test. They were not given access to the modules during the field test, but were allowed to use them at a later date. Data on comparability of the teachers across all sites are presented in Table V.

TABLE V

Data on Treatment and Control Teachers

	N	Sex	Average Age	Average Education	Average Years Teaching Experience	Average Years Teaching Experience in Adult Programs
Treatment	29	29F	37.0	BA + 40.75 units	9.1	6.0
Control	31	30F, 1M	39.5	BA + 28.6 units	8.5	6.0

All teachers (treatment and control) were paid for the services they furnished in the field test and the treatment teachers were required to certify that all modules had been taught as planned.

At the workshop, each teacher received two hours of training on test administration procedures and instructional strategies. During the training the project director emphasized the importance of adherence to procedures in order to ensure the validity of field test results.

Each teacher served as either the treatment or control teacher for an average of two modules. When instruction began, the local coordinator made sure that both treatment and control teachers had necessary materials and that pre- and posttests were administered at or near the same time. The interval between pre- and posttest administration ranged from one day to three weeks; pretests for each module were given to treatment and control students within the same calendar week, and the same was true of posttests. Teachers administered the tests to their own classes. All test materials were returned to the Project CLASS staff for scoring and analysis.

Comparability of treatment and control students. Comparative data on the treatment and control students at each site are presented in Table VI:

TABLE VI

Data on Treatment and Control Students

		Total N per Site	Average N per Class	Average Age	Average Years of Education
Clovis	Treatment Students	10	10.00	37.00	4.70
	Control Students	11	11.00	27.27	9.10
Fremont	Treatment Students	123	17.57	31.62	12.28
	Control Students	101	14.43	32.15	12.28
Mira Costa	Treatment Students	221	14.29	27.14	8.17
	Control Students	209	12.61	26.40	8.26
San Diego	Treatment Students	374	12.94	27.24	9.01
	Control Students	432	13.58	27.78	10.30
TOTALS	Treatment Students	728			
	Control Students	753			

Efforts were made to ensure that treatment and control classes for each module were roughly comparable in reading levels. In 44 of the 60 cases both classes were the same type: both were ABE classes with 0-4 reading levels, both were ABE classes with 5-8 reading levels, both were ESL classes, or both were another adult class (GED preparation, high school diploma preparation, government, etc.). For the remaining 16 modules, the classes were not the same, though for 8 of them low-level (0-4) ABE students were compared to low-level ESL students. It was in anticipation of such problems that the research design included a pretest administration to measure comparability of groups on each objective prior to introduction of the module.

Analysis and Results

Each of the 60 modules was completed by only one class of adult students, whose performance on the module pre- and posttests was compared to that of its own control class. Initial analyses were made to calculate the percent of students showing mastery level performance on the pretest and posttest for each of the 228 individual objectives (or set of objectives tested by one set of items). The difference between the class pre- and posttest percents, or the gain in percent of students mastering each objective, constituted the basic data upon which subsequent analyses were performed. Because of the noninterval characteristics of these data (i.e., each pair of treatment class/control class gain scores represented the performance of two different groups of students on a different set of items), only nonparametric statistical analyses were performed. Results were analyzed by site because of the demographic differences in student populations across the four sites.

Table VII shows the range and median of percent of students mastering objectives at each of the four sites. The wide range of mastery percentages reflected in Table VII is typical of adult education classes. Chi square tests on pretest mastery/nonmastery scores showed that in 22 cases out of 228 possible, treatment group mastery was significantly higher ($p<.05$) than the control group. All of these data were removed from subsequent analyses, leaving 206 pairs of comparisons (see Table VIII). Data in which pretest control group mastery significantly exceeded treatment group mastery were retained.

The Mann-Whitney U test with correction for ties was chosen to analyze the percent mastery gain comparisons at each site. Table VII also contains the results of these analyses, illustrating the *z* scores derived from the computed U values and the probabilities of obtaining such *z*s by chance. At all four sites, the differences in percent mastery gains are highly significant in favor of the treatment groups, a finding that is reflected in the differences in the median gains at each site--29 versus 8 at Fremont (based on 23 comparisons), 52 versus zero at Mira Costa (56 comparisons) 80 versus zero at Clovis (7 comparisons), and 20 versus zero at San Diego (120 comparisons).

Evidence That Effects Are Attributable to Intervention

The tremendously significant differences between treatment and control groups in gain in percent of students mastering objectives are the strongest evidence that the modules themselves were the source of the observed treatment group changes. Even with a wide range of ability levels in both treatment and control groups, the treatment classes gained the same as or more than the control classes in 193 comparisons (85%), often substantially more. The students and teachers involved in each group and the conditions under which modules were taught and tested were as comparable as real-world conditions and the varied character of adult program populations would permit. Finally, the pretest data were used to remove any possible bias in favor of treatment classes and in fact to bias the results against the program.

Evidence That Effects Are Educationally Significant

That a set of effective instructional materials is available to assist a growing segment of the population in acquiring the skills needed to cope successfully with typical challenges and problems facing adult citizens today is, indeed, significant. Increasingly, adults are being bombarded with the message to "get this education and you'll be guaranteed a move up on the ladder to success." However, many adults who are susceptible to such messages, desiring to educate themselves in order to participate more fully in the benefits of living in this society, do not have the "threshold" skills that would equip them for participation in typical educational programs. The Project CLASS materials offer these adults an opportunity to learn such requisite skills. Moreover, the materials are inexpensive and relatively easy to adopt, either in the teacher-implemented version, in which they can serve as the major basis of instruction for low-ability readers, or in the independent study version, in which they can play an enrichment and reinforcement role for better readers.

Evidence of Generalizability

The Project CLASS modules have been developed and revised with input from a number of sites in California and field tested at four demographically different California sites. The adults who participated in the field tests were of widely varying ages (16-79), of all major American ethnic minorities (see Table 1), and of widely different ability levels. Field sites ranged from rural to highly urbanized. The evidence of growth in the treatment group is strong at each site. Therefore, it is concluded that these competency-based modules are effective in teaching survival skills to adults of low-level reading ability.

TABLE VII

Median and Range of Percent Mastering Objectives and Percent Gain, and Mann-Whitney U Results

		% Mastering Objectives: Pretests		% Mastering Objectives: Posttests		% Gain		z Scores Derived from Mann-Whitney U-Test	Significance Level
		Median	Range	Median	Range	Median	Range		
Fremont	Treatment	47.0	5 to 100	80.0	6 to 100	29	0 to 71	-3.7518	p<.001
	Control	50.0	0 to 100	53.0	0 to 100	8	-15 to 40		
Mira Costa	Treatment	30.5	0 to 100	92.5	18 to 100	52	-9 to 100	-6.4933	p<.001
	Control	28.0	0 to 100	40.0	0 to 100	0	-30 to 36		
Clovis	Treatment	0	0 to 60	80.0	60 to 100	80	40 to 100	-3.2131	p<.001
	Control	9.0	0 to 45	9.0	0 to 36	0	-9 to 0		
San Diego	Treatment	52.0	0 to 100	70.0	0 to 100	20	-57 to 92	-7.3484	p<.001
	Control	48.5	0 to 100	57.0	0 to 100	0	-91 to 82		

TABLE VIII

Pairs of Comparisons: of Pretest Mastery Percentages; Eliminated; and Used in Computing Mann-Whitney U Values

	Objectives Per Site	Pairs of Comparisons per Site (A Few Containing More Than One Objective)	Eliminations per Site Due to Significant Pretest Chi Square Favoring Treatment Group	Pairs of Comparisons Used in Computing Mann-Whitney U per Site
Fremont	26	25	2	23
Mira Costa	61	56	0	56
Clovis	7	7	0	7
San Diego	144	140	20	120
TOTAL	238	228	22	206